## REMARKS

In the above-identified Office Action, the Examiner has objected to claims 2, 3 and 5 because of certain stated informalities. These informalities have been corrected and as such, the claims are now considered acceptable.

Claim 1 has been rejected under 35 U.S.C. §112 as being indefinite. Applicant has replaced the indefinite language with more definite language and as amended, Applicant believes that claim 1 is now acceptable under 35 U.S.C. §112.

Claim 1 has also been rejected under 35 U.S.C. §102(e) as being anticipated by the publication to Asayama et al. as amended. Claim 1 now recites that a certain specified range of nitrogen concentration and oxygen concentration as measured by a graph are present; these concentrations may be found on or below a straight line connecting certain specified points. Accordingly, claim 1 now recites over Asayama et al. which does not suggest such values.

Claims 1-3 have been rejected as being obvious over the patent to Wijarankula in view of Graef et al. or Tamatsuka et al. The Examiner has stated that it would have been obvious to modify Wijarankula with Graef et al.'s nitrogen doped silicon substrate to reduce larger defects in the silicon substrate wafer. However, as amended, claims 1-3 now recite that the nitrogen and oxygen concentration fall within an area in a graph on or below a straight line connecting a point at certain oxygen and nitrogen concentrations. This is not taught or suggested in any of Wijarankula, Graef et al. or Tamatsuka et al. Accordingly, Applicant believes claims 1-3 are patentable there over.

Claims 4-9 have been rejected as being obvious over the patent to Graef et al. The Examiner has stated that it would have been obvious to modify Graef et al. by optimizing the nitrogen and oxygen concentration by conducting routine experimentation of result effective variables to minimize large defects. Applicant believes the Examiner to be wrong in this rejection noting that Graef et al. does not teach maintaining both the oxygen and nitrogen concentration to be at a level where when plotted on a graph are on or below a line connecting the points recited. Further, it would not have been obvious to optimize such variables, as Graef et al. does not teach or suggest that these values should be varied. As a result, there is no suggestion in the art that the optimization of these particular variables would result in a better process or product.

The present invention is made based on an inventors' discovery of the fact that "in order that defects of the epitaxial surface layer should not be produced, it is necessary to consider the nitrogen concentration and oxygen concentration in relation to each other, such that, while the nitrogen concentration may be high if the oxygen concentration is low, on the other hand, if the oxygen concentration is high, the nitrogen concentration must be made low in order to prevent production of defects in the epitaxial surface layer" (paragraph bridging page 2 and 3 of the specification).

Thus, the present invention requires that nitrogen concentration and oxygen concentration fall within an area below the solid line or dashed line of the graph of Fig. 4, which shows a relationship between the oxygen concentration and the nitrogen concentration.

This configuration is not disclosed or suggested by the art of record. The cited art at most suggests a range of the nitrogen concentration with respect to a fixed oxygen concentration. In Fig. 4, this range would be shown as a line (one dimension). In contrast, in the present invention, the relation between the nitrogen concentration and oxygen concentration may be best shown as a three-dimensional area.

Applicant hereby requests reconsideration and reexamination thereof.

With the above amendments and remarks, this application is considered ready for allowance, and Applicants earnestly solicit an early notice of same. If the Examiner believes that a telephone conference would expedite prosecution of the subject application, he is respectfully requested to call the undersigned attorney at the telephone number listed below.

Respectfully submitted,

Gerald T. Shekleton
Registration No. 27,466

Dated: April 25, 2003

**WELSH & KATZ, LTD.**
120 South Riverside Plaza, 22nd Floor
Chicago, Illinois 60606-3913
Telephone: 312/655-1500